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LIST OF PRIOR ART CITED BY APPLICANT

INVENTOR: DONALD BRINGMANN
INVENTION: TOILET FLUID DISPENSER

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Form PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE
BRIEF DESCRIPTION OF PRIOR ART CITED BY APPLICANT

INVENTOR: DONALD BRINGMANN

INVENTION: TOILET FLUID DISPENSER

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In. U.S. Patent Number, 6,526,599, invented by, Benayahoo, titled, Passive dispenser for dosing and issuing a predetermined amount of dispensable liquid, a dispenser for dispensing metered amount of liquid into a toilet cistern, comprising a basin adapted to receive a metered amount of dispensable liquid received from a container via a discharge spout. An airlock prevents further discharge of liquid above a predetermined amount in the basin when the discharge spout is covered by the dispensable liquid. A siphon inlet is in liquid communication with the metered amount in the basin, and the siphon outlet is in liquid communications with the cistern water at quiescent times. Upon flush, the siphon siphons out the dispensable liquid in the basin, breaking the airlock, and allowing a new metered amount of dispensable liquid to flow to the basin, ready for next flush.

In. U.S. Patent Number, 5,718,006, invented by, Dixon, titled, Fluid dispenser, an apparatus is provided for dispensing fluid into a cistern such as a cistern on a water-closet, toilet or urinal. The apparatus comprises a receptacle (1) to be mounted in position within the cistern (not shown). A pivoted scoop (5) is mounted to move pivotally about trunnions (6). The pivoted scoop (5) is provided with a ladle (7) for collecting fluid (31) from the cistern and a trough (8) for dispensing the fluid (31) collected by the ladle (7) into the cistern. The scoop (5) is also provided with holes (13) for draining fluid (31) from the trough (8) as fluid (31) is collected by the ladle (7). A float (14) is connected to one end of the scoop (5) to cause the scoop (5) to pivot and dispense fluid (31) whenever the cistern is emptied. The float (14) is provided with a first cavity (21) for forming an air pocket in the float (14) and a second cavity (20) which allows water (28) provided in the cistern to enter and weigh down the float (14).

In. U.S. Patent Number, 5,542,605, invented by, Campau, titled, Automatic liquid dispenser, an automatic liquid dispensing apparatus including a container for holding a dispensable liquid, a flow regulator which permits liquid to flow out of the container at a controlled rate which is independent of the quantity of liquid within the container, and a timing and dispensing assembly. The timing and dispensing assembly accumulates a quantity of the liquid from the flow regulator, and periodically dispenses a constant volume of the liquid.

In. U.S. Patent Number, 5,449,117, invented by, Muderlak, et al., titled, Apparatus and method for controllably dispensing drops of liquid, a drop dispensing device includes a liquid ejection system, such as a timed pump mechanism, and a multi-channeled nozzle cooperative with the ejection system, for directing ejected liquid out of a container and into a chamber external to the container wherein the nozzle further includes drip tabs for forming and directing drops. The chamber is divided into a plurality of cavities and is formed by a plurality of interconnected walls. The chamber is adapted to receive the nozzle and includes a raised drainage orifice for each cavity such that the drainage orifice is operatively coupled to a guide tube for simultaneously guiding draining drops from the chamber to a plurality of selected surfaces:

In. U.S. Patent Number, 5,353,957, invented by, Campau, titled, Apparatus and method for controlled dispensing of a liquid, an apparatus and method are disclosed for dispensing a first liquid into a second reservoir liquid. The apparatus comprises a container adapted to hold the dispensable liquid, a dispensing nozzle and a sensing tube. The dispensing nozzle is positioned on the container below the dispensable liquid level within the container. The sensing tube has first and second open ends, the first open end positioned above the dispensable liquid level within the container and the second open end positioned outside the container and below the dispensing nozzle. The second open end of the sensing tube is immersible in the reservoir liquid, whereby the cyclic fall and rise of the reservoir

liquid results in the controlled discharge of the dispensable liquid from the container through the dispensing nozzle. The method comprises the steps of providing a container as described above, locating the container above the reservoir liquid, and causing the reservoir liquid to rise and fall to discharge the dispensable liquid from the dispensing nozzle.

In. U.S. Patent Number, 5,295,274, invented by, Daniels, et al., titled, Liquid dispensing apparatus, Liquid dispensing apparatus includes a tank for storing liquid to be dispensed, a fill line communicating with an interior of the tank and adapted to be coupled to a source of the liquid, a heating element for heating the liquid, a heating control device for controlling the heating element to heat the liquid to a predetermined temperature, a dispensing device for dispensing liquid from the tank under pressure and a dispensing control device for selectively controlling the dispensing of the liquid by the dispensing device. The fill line is adapted to be connected to existing plumbing, such as a toilet water supply line behind a wall adjacent the toilet. The tank is adapted to be housed in a recessed wall cabinet adjacent the toilet so that the entire apparatus is hidden from view when not in use. The tank includes a sump portion defining a lowermost portion of the tank, to facilitate complete evacuation of liquid from the tank. An electrically operable pump is preferably located at the bottom of the sump portion for discharging liquid therefrom. A sight gauge is located on the front of the tank to permit visual observation of the level of liquid in the tank. User-operable switches are provided to allow a user to manually control the pump and the heating element. A thermostat is provided for automatic control, of the heating element.

In. U.S. Patent Number, 4,251,012, invented by, Owens, et al., titled, Passive liquid dosing dispenser, a passive dosing dispenser for issuing, for example, a predetermined volume of a liquid toilet tank additive solution into a toilet tank as the water is draining therefrom while the toilet is flushing. The dispenser employs no moving parts, and acts in response to the lowering of the water level in the toilet tank to dispense the liquid solution at a point in the flush cycle when it can be most effectively utilized. The liquid solution in the dispenser is maintained in an isolated condition by means of airlocks from the toilet tank water surrounding the dispenser regardless of the depth to which the dispenser is immersed in the tank during quiescent periods intermediate flush cycles.

In. U.S. Patent Number, 4,017,393, invented by, Foggett, titled, Apparatus for dispensing a liquid, an apparatus for dosing a treatment solution into a waste liquid comprises a device for measuring and dispensing a predetermined volume of solution, means for delivering treatment solution to and from the device and control means adapted to determine when waste liquid is present to be dosed and activate the device to dispense a measured volume of treatment solution into a waste liquid. The device has a container with an inlet and outlet diaphragm valve, and an air vent means for venting the chamber during filling and dispensing of treatment solution. Reversible actuation means is provided for simultaneously opening the inlet valve and closing the outlet valve to permit filling of the chamber with a treatment solution and for simultaneously closing the inlet valve and opening the outlet valve to permit dispensing of the measured volume of treatment solution. The control means operates the reversible actuation means to dispense treatment solution into the waste liquid and is adapted to close the outlet valve and open the inlet valve in the absence of waste liquid to be dosed.

In. U.S. Patent Number, 3,945,060, invented by, Gargione, titled, Liquid dispensing bottle-hanger construction, a liquid dispensing bottle has a mounting clip for hanging the bottle in an inverted position within a flush tank of a toilet for automatically dispensing a predetermined amount of liquid during each flushing operation. A circular boss is formed on the bottom wall of the bottle and the clip is rotatably mounted thereon for movement between stored and hanging positions. The clip has a pair of arcuate fingers which circumferentially, slidably engage the boss, and an L-shaped member a portion of which extends upwardly along a protuberance formed in a lower portion of the bottle side wall when in a stored position. The L-shaped member forms a channel or hook with the side wall of the bottle when the clip is rotated 90.degree. from stored to hanging position and the top edge of the flush tank is engaged by the L-shaped member to hang the bottle thereon. A plurality of ribs are formed on the clip bottom surface to provide a flat, horizontal, three point support for displaying and storing the bottle in a stable upright position.